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AMERICAN BEE JOURNAL

46th Year

CHICAGO, ILL., MARCH 29, 1906

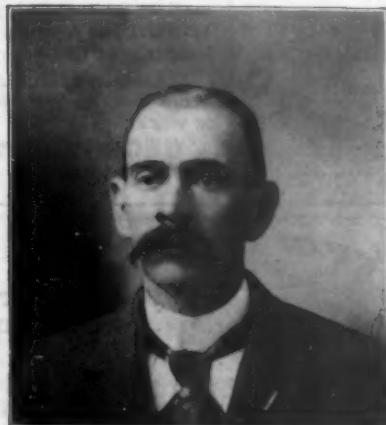
No. 13



DR. MILLER PUSHING SECTIONS OUT
OF A T-SUPER



APIARY OF
O. K. RICE, OF GRAY'S RIVER, WASH.



W. L. SMITH, OF RICHMOND, VA.

(See pages 270 and 271.)



DR. MILLER LIFTING OFF THE

T-Super.





PUBLISHED WEEKLY BY
GEORGE W. YORK & COMPANY
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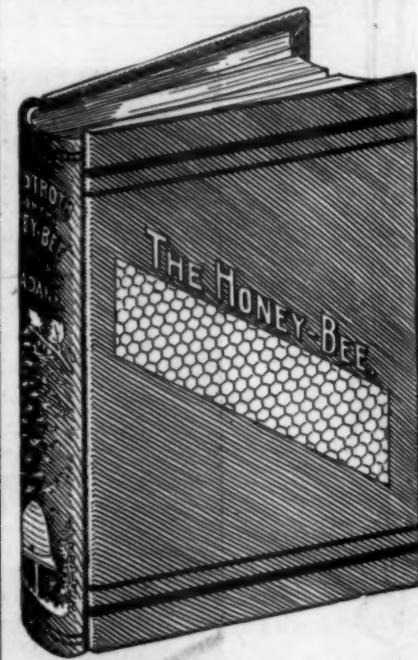
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(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

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GEORGE W. YORK, Editor

CHICAGO, ILL., MARCH 29, 1906

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Editorial Notes and Comments

Hives in Which Bees Have Died

Every spring finds all over the land hives in which bees have died. Some colonies have died of diarrhea, some have been queenless, some have had drone-laying queens. Whatever the cause of death, the hives have value, and can be used to receive swarms. If they have movable frames, the combs have a cash value for future use. The combs in box-hives can at least be melted to obtain the wax, and should not be left a prey to the wax-moth.

Don't add to the loss of bees by allowing anything that is left to be lost.

Honey Left by Dead Colonies

"Is it safe to feed to the bees honey that is in combs left by colonies that have died?" This question is sure to be asked by a number of anxious beginners. When the weather becomes warm enough for bees to fly daily, it is safe to feed anything in the line of sweets short of actual poison, unless the honey comes from colonies that had foul brood, and honey left by dead bees is all right at any time. Very often the honey is robbed out by the bees before the bee-keeper discovers what is going on, and this method of disposal is not a bad one. It has at least the merit of requiring no labor on the part of the bee-keeper. Another way, and a good one, is to leave the honey in the combs till they are given to a swarm.

Care of Empty Combs Left by Dead Colonies

The combs left by colonies that failed to pull through the winter should not be left uncared for until swarming-time. A swarm is pretty sure to desert if put into a hive containing a lot of dead bees in a wet mass on moldy combs, but is attracted by an outfit of empty combs in good condition. The first thing to be done—and the sooner it is done the better—is to get out of the hive all the dead bees. One way is to sweep the bees off the combs with a common house-broom. One person handles the combs, and another the broom. A comb is laid flat on the ground and swept, turned over and swept on the other side, and then put into a hive which has been carefully cleaned out, and then the other combs are cleaned the same way.

So long as the weather remains cool, such combs may be left safely outdoors, but when the weather becomes warm enough wax-worms will appear, and if left long enough undisturbed they will utterly destroy the combs. Closing the hives up tight will do no good, for the eggs or young larvae are there from the previous season. If the combs are left in a dry cellar, it will be too cool for the worms to make much headway. But there is no place where these combs are so safe as in the care of the bees themselves.

As soon as the weather warms up and colonies become strong, each strong colony can take care of a hiveful of empty combs. Put a hiveful of combs under the hive containing the strong colony, so that the bees must pass through the combs upon leaving or returning to their home. Of course, this presupposes that the bottom-boards or floors of your hives are removable, and if they are not you will do well to make them so.

It may surprise you to see how nicely the bees will clean up dirty, moldy combs. If some honey is in the combs, all the better. When the combs are well cleaned, a second hiveful of combs may be given. Put this second hiveful on top of the one already cleaned, and then set the colony over all. These combs can then be left thus till needed for swarms.

Newspaper Declines to Correct Apiarian Errors

A February issue of the Chicago Record-Herald contained some misstatements of facts regarding bees and honey, and several of our readers called our attention to them. We at once wrote a courteous correction, and here is the reply we received from the Record-Herald:

CHICAGO, Feb. 23, 1906.

MR. GEORGE W. YORK, Editor American Bee Journal—
Dear Sir :—The editor directs me to acknowledge receipt of your favor of the 22d inst., to thank you for it, and to explain to you that he regrets he can not see his way clear to devoting space to making suggested corrections.

The published matter to which you call attention was a reprint from the New York Sun. The errors, therefore, were the New York Sun's errors. And if the Record-Herald started out to correct all material errors in other newspapers, it would have to abandon, necessarily, its proper function—the publication of news.

Thanks again for your letter.

Yours very truly,

MANAGING EDITOR.

Isn't it a little strange that the great Chicago Record-Herald could find room for the misrepresentations, and yet could not allow space to correct them?

As we look at it, when the American Bee Journal copies errors from other sources, those errors in a measure become its own, and we feel in duty bound to correct them in the American Bee Journal so far as possible. We suppose if

the New York Sun published as a news item that President Roosevelt was dead (when he wasn't), and the Chicago Record-Herald then copied the statement, it would not correct it just because it was an error of the New York Sun! And that is modern newspaper procedure.

Well, we are glad we don't have to run the American Bee Journal in that way.



Miscellaneous News & Items

Editor Ernest R. Root, of Gleanings in Bee Culture, made us a brief office-call when in Chicago last week.

The 1906 Convention of the National Bee-Keepers' Association will be held in Texas, Nov. 8, 9 and 10. The exact place will be announced later. We hope that nothing will arise to change it again, as was the case last year.

Apiary of O. K. Rice.—When forwarding the small photograph, Mr. Rice wrote as follows:

I am sending you a picture of myself and wife, taken by my oldest daughter last summer, just as I was working with the bees. It shows only a few of the 30 hives in the orchard, with the winter-cases still on, but the roof does not go down to them, as they are 2 stories high.

O. K. RICE.

Apiary of W. L. Smith.—On the first page appears a picture of Mr. Smith, and below is one of his apiary. He wrote us as follows when sending the photographs:

The picture herewith is of my "Virginia Apiary," which is on a porch about 9 feet from the ground. I am standing about the middle. To my right is Arthur Smith, and at the left is Purcie Smith, my nephews. You see I am an old bachelor, and have to borrow my brother's boys to help me out. At the rear is my residence. There is a

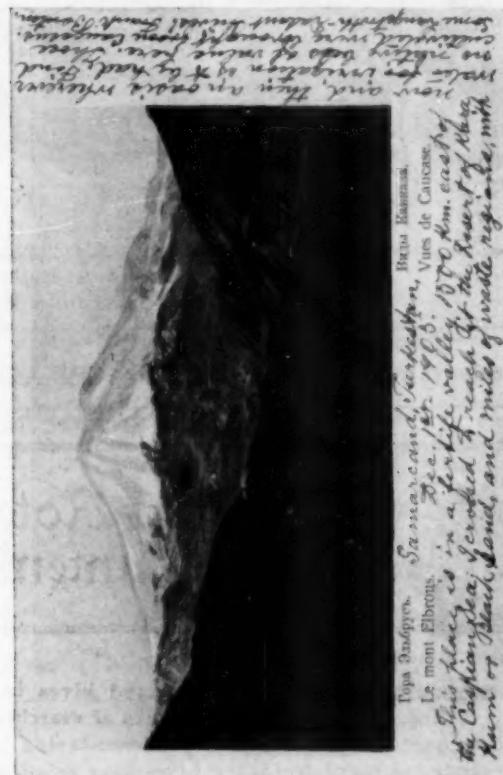


bridge extending across to a workshop, which has a porch along the back, with bees on that also. There is also a platform extending around the house with 7 hives.

I have been handling bees in modern hives about 11 years. Before that time I made cabinet hives with glass to look through, and glass-top drawers above. I have 22 colonies of bees, mostly Italians. I have 1 Carniolan, 1 Albino, 1 Holy Land, and 2 Cyprian colonies, but I do not find much difference in their tempers. I can handle one kind as well as the other. We sleep on the platform with the bees any night in summer. My honey crop varies. Some years I get 60 pounds per colony. Last year the frost killed the early blooms, and I did not get more than about 25 pounds to the colony.

I have been making my own hives the Langstroth pattern excepting that mine are $16\frac{1}{4} \times 16\frac{1}{4}$ inches, and 10 inches deep outside. I use sections $3\frac{1}{2} \times 5 \times 1\frac{1}{4}$. But lumber has gone up so high here that I have bought hives in the flat for less than the lumber would cost me. W. L. SMITH.

Mr. Frank Benton, Apicultural Investigator of the United States Department of Agriculture, as most of our readers know, is on a journey to Europe and Asia for the purpose of looking up new races of bees, and also honey-



plants. The reproduction herewith is from a souvenir postal card sent to Mr. C. P. Dadant, President of the National Bee-Keepers' Association. The scene shown is nearly 1000 miles east of the Caspian Sea. No doubt Mr. Benton finds his journey quite frequently perilous. He will have an interesting story to tell when he returns to this country.

Illinois Bee-Keeping.—Secretary Stone, of the Illinois State Bee-Keepers' Association, sends us the following:

I sent out 360 letters to as many of the Crop Reporters of the State, and through their kindness received back from about 200 of them the names of 1131 bee-keepers.

The number of colonies of bees reported with 873 names was 20,361, or an average of $23\frac{1}{3}$ colonies per name. With the same average for all the names received through the Reporters, and by the kindness of the Editor of the American Bee Journal—viz., 2222, after deducting 94 names duplicated—we would have a total of 51,106 colonies; and if these should produce a common average of 40 pounds per colony, we would have a total of 2,055,520 pounds of honey annually.

The remarkable fact that in getting together all these names from about 200 different persons, and only 94 duplicated names, goes to prove that we have only a small proportion of them; and, further, we were told at our last convention by a member, that he had counted 100 bee-keepers in his county, and he was sure he could count that many more; and yet we have only 5 or 6 given by the Reporter from that county. So we must conclude that we are not able even to guess at the number of colonies or bee-keepers in our State.

JAS. A. STONE, Sec.

The March Number of Irrigation—the official organ of the Colorado Bee-Keepers' Association—contains no bee-matter except a short note of greeting from the new Secretary, G. J. Tomlin. If he is as good a man as the old Secretary, the Association is to be congratulated.

See Langstroth Book Offer on another page of this copy of the American Bee Journal.



Contributed & Special Articles

Right Kind of T-Super All Right

BY DR. C. C. MILLER.

ON page 160, F. Greiner mentions my calling attention to the slight sagging of bottom-bars in wide frames, and says:

"This shows that Dr. Miller has had some experience along this line. It must be he has used wide frames, and the wonder is that such an insignificant matter could induce him to abandon the wide frame for the most worthless super ever invented."

When so bright a man, and so good a bee-keeper as F. Greiner, puts me down as doing what evidently appears to him a very stupid thing, I can but attempt to give my reasons for thus doing, in hopes to reinstate myself in his good opinion.

In the first place, Mr. Greiner, let me plead not guilty to the charge of abandoning the wide frames on account of the sagging of the bottom-bars. I don't think I would ever have abandoned them for that reason.

You are right in supposing that I have had experience with wide frames. I used them by the thousand, used them for years, used them with much satisfaction, and only abandoned them when I found something I could use with more satisfaction. According to your arraignment of the T-super, I don't see how you could do other than to discard it. You say:

"Some bee-keepers who have had no experience with wide frames are afraid there may be difficulty (?) in taking the filled sections out of them. If they had had any experience, they would have found it a great deal easier than to take the honey from T-supers, and just as easy as taking the sections out of the section-holders with no top-bars."

Well, there is experience and experience. Whatever the quality of my experience, I'm sure it has not been lacking in quantity, both with the wide frame and T-super. I've taken tons of sections from each. In the years that I used wide frames I made advancement in methods of taking sections out of them, but at best could not take them out as safely or as rapidly as I can out of T-supers. Mind you, I don't say you can't work more rapidly with wide frames than you can with T-supers—I'm only saying how things are in my locality. You say:

"There is no super on earth that gives us more trouble than the T-super. I find it impossible to 'get the sections out' without setting a large percent to leaking."

If I should set to leaking a single section in taking 10,000 sections out of T-supers, I should think I had been extremely careless. Neither is that because of expertness gained from long experience. In the course of the past few years, three different raw hands have been set to work taking out sections, each of them taking out thousands, and not a section was set to leaking by either of them, except in one case, when one of them let a whole super fall to the floor, and then there was leaking by the wholesale. Speaking of T-supers, you say:

"I have used them for 20 years, and have followed the instructions given by many on how to empty a super, but have not yet learned the trick, or a better way than carefully to remove one section after another with the super right side up and follower removed. The difficulty lies in loosening the section from the T-tin, which can not always be accomplished without cracking the honey."

I never undertook to empty a whole super in the way you indicate, but occasionally have taken out a section or two, and if that's the best way in your locality, I don't wonder at your rejecting the T-super. I think I could work twice as fast with wide frames. It's a ticklish thing to loosen the section from the T-tin, and no matter how slowly I worked I should expect to crack a lot of sections. But I don't loosen the section from the T-tin. I turn the super upside down, with a push-board over the sections I push the sections down, after having pushed down the follower, and lift off the super, leaving the sections in a block, T-tins and all. Then, instead of loosening the sections from the T-tin, the T-tins are lifted off the sections. Five seconds is sufficient time to lift off the 3 T-tins, and the greenest hand can not crack a section in so doing. In the worst cases of gluing, it takes a little coaxing

to lift off the T-tin, but there is no danger of cracking the sections.

You speak of the trouble with bee-glue, and of sending me a sample. I didn't know till reading your article from whom the sample came, but the piece from the T-super was bad beyond anything, I think, I ever had. Now listen:

With me there is more glue in wide frames than in T-supers. I can easily believe it is just the reverse with you, and I think I understand why. I think you are a buckwheater, and when buckwheat is on, glue is so plenty that the bees not only fill all cracks with it, but plaster it plentifully on any exposed surface. My surplus is practically all from white clover, and at that season, although I'm counted to be in a gluey region, the bees have no more glue than they can use in filling cracks; so there is no glue deposited on the exposed top-bars and bottom-bars. The earliest supers scarcely need scraping, with T-supers, while with wide frames there will be lines of glue packed in, top and bottom, because there are cracks there that are not in T-supers. Yet even if glue were worse with T-supers, that would not counterbalance the advantages, especially the advantages of filling and emptying.

Now, Mr. Greiner, I've tried to clear my position, and you'll not any longer think that, *for me*, the T-super is "the most worthless super ever invented," will you?

Marengo, Ill.



7—Dadant Methods of Honey-Production

BY C. P. DADANT.

IF the reader has noted what I have previously written on our method of artificial increase, he will readily understand that we had no desire for natural swarms. We have several reasons for this. In the first place, as stated before, the natural swarms, if they come at all, will be from those colonies which would be most likely to produce the largest amount of honey. We have no control over the time of issue or over their number. They may issue at a time when we are very busy—they usually do, for the honey season is always a busy season. Neither are we alone in this matter. Many apiarists are also farmers or business men and must be away from the house during the greater part of the day, and would surely prefer to decide for themselves as to the number of colonies of increase, and the time to make that increase. Besides, there comes a time when we think we have enough colonies of bees, and want only honey. Thus, if a method may be devised by which we can almost entirely avoid natural swarming—avoid it so that the number of swarms issuing in average seasons will be too small to make it worth while to watch the bees—we have gained an immense point. No one has so far been able to claim an absolutely infallible method, neither is there any such thing as an absolutely non-swarming hive, but with a certain management the number of swarms is reduced to the minimum.

In two seasons, some years ago, an out-apiary of 87 colonies, at the home of a friend (Mr. P. Champeau), harvested 13,000 and 12,500 pounds of honey, or a total of 25,500 pounds in the two seasons; and in the same length of time the number of swarms was only 5. Three colonies having died during the winter between those two seasons, the total increase was only 2 colonies. I trust the reader will not take this as an average of results, for we have many bad seasons, but it shows what may be done in the way of large crops and reduced swarming when all is favorable.

Connected with the prevention of swarming is the use of large hives, both in the brood-chamber and the supers. This has been our hobby for over 30 years, but it is a hobby which is well sustained by facts.

The manner in which we became convinced of the superiority of large hives has been mentioned by me in the bee-papers in years past, but good things will bear repeating.

We began with comparatively small hives, mainly the 8-frame Quinby and the American. Then we began to manufacture 12-frame hives, for the purpose of trying side-storage, which, by the way, was discarded. A friend of ours made some 16-frame Quinby hives, in which he had planned hiving three swarms each, but his pet scheme was not practical and he failed and sold us the hives. We used them 10 or 12 years for single colonies.

Then we had an apiary in charge for several seasons, of about a hundred 10-frame Langstroth hives. We finally settled on a 9-frame Quinby hive with 2 divisions-board, which was later changed to 10 frames, with one division-board. By trial, side by side, of large hives with wide supers, and small hives with narrow supers, we were convinced that the large

hive was the better. Why? Because the large colonies filled their large supers just as quickly as the small colonies filled their small supers. Or, in other words, a colony having 10 frames and a dummy or division-board filled a super 16 inches wide as quickly as a colony with 8 frames filled a super covering the 8 frames, or 12 inches wide. Now, please bear in mind that this does not take place in *every instance*. But when we have good, prolific queens in our colonies, this will prove true in the majority of instances during good seasons. Our trials were not made on 8 or 10 hives of a kind, but on hundreds of each kind.

I see, in some European papers—I will not name them for fear of hurting some feelings—that experiments are conducted and conclusions reached with 2 colonies. Some of those experiments would give an entirely different result, if they were conducted on from 20 to 50 colonies; and they would be still more conclusive if they were conducted in different apiaries located at spots giving a different crop.

I have stated that large hives give large crops. Now here is our explanation of the cause; allow me to quote Mr. Langstroth, for I cannot put my meaning in better words, and it was his ideas which prompted us to try different sizes of hives:

"Many hives cannot hold one-quarter of the bees, comb and honey which, in a good season, may be found in large ones; while their owners wonder that they obtain so little profit from their bees. A good swarm of bees, put into a diminutive hive, may be compared to a powerful team of horses harnessed to a baby wagon, or a noble fall of water wasted in turning a petty water-wheel. As the harvest of honey is always in proportion to the number of bees in the hive, and as a large colony requires no more labor from the apiarist than a small one, the hive should afford the queen sufficient space to deposit all the eggs which she is able to lay during 21 days—the average time for an egg to be transformed into a worker. Besides, it should contain a certain amount of food, honey and pollen."

The size of the hive must, therefore, be figured according to the ability of the queen to fill the cells with eggs. It was upon this that my father based the experiments which practice confirmed. He was not content with experimenting with Quinby and Langstroth hives of from 8 to 16 frames—he even tried hives with frames 18x18 inches, which, I will hasten to say, proved a complete failure. They were too large.

Although many leading apiarists disagree with us upon the question of large and small hives, they do not disagree upon the idea evolved. All those who have investigated agree that, in many instances, the queens can fill with eggs as large hives as we use, and that in those instances large hives are good; but they insist that the hive to be used must be small enough to accommodate only average queens, preferring to crowd the best queens rather than give too much room to the poorer ones. That is all the difference. We believe in placing our aim at the best, trying to achieve a result allowing the development of the best, which in most cases secures the best, as we have proven to our heart's content, by constant success.

Hamilton, Ill.

Temperature Inside the Winter Cluster of Bees

BY G. M. DOOLITTLE.

ON page 123 will be found some questions asked by "Wisconsin," regarding the temperature inside the "brood-nest," and answers by Dr. Miller, all of which are very interesting to me. As I have conducted some experiments along this line, I will give "Wisconsin" the benefit of the same, and I think others will be interested in the matter also.

Dr. Miller thinks it strange that he cannot find this matter indexed in his bee-books, and I think it strange also; but as far as I remember none of the books treat on this matter, although I think it one of exceeding interest, and one of considerable importance also.

Some years ago I looked for this matter through all the literature on bees which I had, and all I could find on the subject was where Quinby in his "Mysteries of Bee-Keeping Explained" declared that the bees in the inside of the cluster during winter are as lively as in summer, while those on the outside were somewhat stiffened with the cold. This I found to be a fact. It was at the time the subject of bees hibernating during winter was under discussion, some claiming that they *did* hibernate, while I, and others, did not believe it. So, to prove that Quinby and myself were correct, I went to a colony one morning when the mercury was at 15 degrees

below zero, and suddenly jerked up one of the frames which went down through the middle of the cluster, when I was met by a teacupful or less of bees that took wing and darted at me to sting. Of course I lowered the frame back as soon as possible, exclaiming to myself as I did so, "Quinby was right! No hibernation there!" And I would say the same to those who are now talking of resurrecting that old idea of bees hibernating. Nothing can be said to hibernate that is able to get a "summer motion" on so quickly as can the bees in a cluster in mid-winter.

Of course, the bees at the outside of the crust forming the cluster were off, and slow to move, as Quinby said, but as soon as this crust was passed the rest were lively enough to "make it hot" for me in short order, even on a 15-degrees-below-zero morning.

A little later on I found these words in one of the bee papers: "Now, when bees are massed together in a cluster during winter they keep up an animal heat that keeps the whole cluster from freezing." And in another paper I found these words: "Not one of our entomologists can tell us anything reliable about the winter temperature of a bee-hive, or the inside of the cluster of bees." This last made me resolve that if such was the case, it was time that some one found out, so I purchased, at a high price, a spirit thermometer said to be perfectly correct in its readings. This I slipped down into the center of a good colony of bees which occupied a sphere about 10 inches in diameter. This thermometer registered cold as well as heat by having two spirit balls and two steel bars, or registers, one on the heat side and one on the cold side. These registers were set at the time of placing it in the cluster at the point where it stood when taking from my coat-pocket, which was about 48 degrees. The thermometer was placed in the cluster at about 3 p. m., and left over night, during which time the mercury outside sunk to nearly zero.

Upon taking it out the next morning I found that a temperature of 87 degrees had been registered of the heat side, this showing that through the disturbance caused by putting the thermometer in, a temperature of that amount had been reached at the highest point, while I had nothing satisfactory as to the lowest point reached during the night.

I then took the thermometer to the house and put it near the stove till a temperature of 110 degrees was reached, when the steel registering bar on the cold side was drawn down so as to register accordingly. I then put a piece of iron on the stove till it was fully as warm as the 110 degrees, when this iron was placed in a box, and one end of a piece of flannel cloth was tucked down over and about this warm iron. Then I laid the thermometer on the flannel, when the other end was brought up over this, and the box closed. I then had it fixed so that I could ascertain just how cold it got while the thermometer was in the cluster, as I would now obtain the coldest register, instead of the warmest, as before.

During the afternoon the weather became severe, and continued so for 5 days, during which time the mercury outside went as low as 16 below zero. When the storm abated the thermometer was taken out, and I found that the coldest point reached inside the cluster during those 5 severe days was 63 degrees above zero. In this way I experimented on several colonies until I found that the average temperature of a good colony of bees in the middle of the cluster is 64 degrees, when the mercury is at zero outside the hive; and that for every 15 degrees of change from the zero point outside, the change in the cluster would vary one degree, or very nearly that. Thus 16 degrees below zero outside gave 63 degrees in the cluster; 30 degrees below gave 62 degrees in the cluster. Zero outside gave 64 degrees in cluster; 15 degrees above gave 65 degrees, and 28 degrees above (the highest it was during the time I was conducting my experiments) gave 66 degrees in the cluster.

All of the colonies were in double-walled hives with packing at the sides and on top. All know that bees can readily fly in a temperature of 45 degrees in the shade, and yet this flying temperature was exceeded by 18 to 20 degrees in the cluster of bees at all times, with a temperature as low as we rarely ever have.

But I see that "Wisconsin" wants to know what the temperature will be "above" the brood-nest. This was what I next proceeded to find out. All who have looked at a cluster of bees in cold weather know that if we open the hive so carefully that the bees are not disturbed, we will see only the pointed ends of the abdomens standing out from the center in all directions, something like the spokes of a wheel stand out, only that these abdomens are packed together as closely as it is possible for them to be, according to the number of bees that can squeeze together between the ranges of comb.

Now by placing the thermometer as close to these abdomens as I could and not hit them, I found that with a temperature of zero outside I had a temperature of 40 degrees about $\frac{3}{4}$ of an inch away from the cluster; and a temperature of 45 degrees when the mercury outside stood at 28 degrees above zero. From this it will be seen that this crust of bees really forms the hive proper, or the walls which confine the heat inside the cluster; which makes the bees really independent of the hive for their existence, only so far as it keeps the winds and storms from them. This part is one of the greatest mysteries to me there is about a colony of bees. I cannot understand how this crust of bees is able to hold the temperature inside it, so as to keep a summer heat inside, with a zero temperature outside; when it looks to me that there must be sufficient holes between the abdomens in this crust to let the air out through them, something as water would run through the holes in a sieve. But for some reason the heat does not so go out, and, furthermore, the bees seem able to control this matter so perfectly that they can raise the heat inside this crust of bees to nearly 100 degrees above, when it is zero outside the hive, and with frost forming on the combs and cover to the hive less than 2 inches from the cluster.

Where the cluster of bees touches the hive in any place, then, of course, the hive, at that place, holds the heat in; but I have seen scores and hundreds of colonies carrying on brood-rearing successfully inside the crust of bees, during March and April, with snow on the ground, when this crust of bees did not touch the hive in any place. And another thing which has always been a mystery to me is, that the bees at the bottom of the cluster appear to be always warmer than at the top. On the principle that heat rises, and that the top of the hive is the warmest, the bees at the top of the cluster should be the warmest and most active. But such is not the case, as I have found by many carefully conducted experiments. Raise a hive up from the bottom, and the first bees will break through the crust right where you are looking. Open the hive at the top, and unless the bees at the top touch the cover of the hive, the first flying bees will come up around the cluster from the bottom, the cluster remaining in perfect order all along between the top-bars of the frames, and down at the sides as far as you can see. In fact, the very topmost bees in the crust are the last ones to start into activity, while those at the bottom are the very first.

Borodino, N. Y.



Mr. Hasty's Afterthoughts

The "Old Reliable" as seen through New and Unreliable Glasses.
By E. E. Hasty, Sta. B. Rural, Toledo, Ohio.

GERMAN CHUNK HONEY.

So the German idea of apicultural how-to-do is chunk honey at 25 cents a pound! Page 139.

FIRST WORK OF BEES—CHECK ON SWARMING.

I think our books and papers very generally say that the young bee's first work is at nursing. On page 140, Stachelhausen indorses another view, to the effect that the first work done is cleaning out cells—several days being spent at it. That the current view is assumed, instead of being proved up, is imaginable, to say the least. Some of us would wish to hear what is the nature of the proof for the new view before accepting it as a finality.

Mr. S. also thinks that the renewed demand for larval food, coming after it had been stopped once, is what checks the swarming impulse, rather than premature field-work on the part of young bees with nothing else to do. The latter seemed rather plausible to me. What's to hinder giving some credit to both?

UNSETTLED BEE-BRUSH QUESTION.

Not to be expected that the bee-brush question would be settled by the Canadians at Brantford, any more than by the rest of our folks. That point is likely to remain long in an every-man-to-his-notion state. Wings and feathers held up their end well. Page 142.

CANADIAN SMOKER-FUEL.

Another unsettled question was—not settled—but illuminated quite a bit at Brantford—the smoker-fuel question.

Jacob Alpaugh has a mixed fuel, gotten up on the principle of that famous drink which comprised—

"A little lemon to make it sour,
A little sugar to make it sweet,
A little brandy to make it strong,
A little water to make it weak."

This fuel hath planer shavings for bulk, cheapness and solidity; some rotten wood to keep it from being too solid; some bits of maple bark to hold fire and keep the thing from going out; some water sprinkled on just right to keep the fire from burning its own smoke. He says the dampening and maple bark are specially important. Some of us will still be liable to say: "The kind I use" is good enough; but perhaps some will vote it of great value to themselves, as compared with their previous fuel. Page 142.

WHEN BEES GET SHORT OF WINTER STORES.

If your bees get out of grub in winter-time you'll have to feed 'em a man. One man, it appears from page 145, brought a September swarm through in extra order by feeding in a large flight-box, in which bees brought home their supplies on the wing (none of your "gittin up stairs" for it). Very likely one colony saved was not enough to pay for the hours spent; but probably the experience did pay for it richly.

NEW TABLE OF CONTENTS.

Hello! Here's a new table of contents—minutely itemized, so you can find everything you want right in one spot. As I did not discover it for three weeks maybe my "Eureka" will direct some other wayfarer to it who otherwise would languish without it. Page 154.

WIDE FRAMES VS. T-SUPERS—SOFT-WOOD FENCES.

F. Greiner says he can empty 4 wide-frame supers in less time than one T-super. If we should say, "Dr. Miller, can you beat that?" we should surely have our genial mentor in a corner where his heart would forbid him to say, "I don't know."

The experience that soft-wood fences get almost entirely eaten up in the course of years should be valuable to those who contemplate going into fences. Page 160.

A SISTER'S EXPERIENCES—FEEDING MULBERRIES.

The Colorado sister who reports on page 162, gives several worth-repeating experiences. On a very slender harvest 6 colonies of goldens averaged 4 times as much surplus as the hybrid colonies did—the latter numbering 25. She finds her hybrids even worse than those recently reported about cleaning up combs and sections in the fall. Very generally refuse to take feed from inside feeders, and that, too, when they urgently need it for the coming winter's supply. And feeding crushed white mulberries, *a la* Dr. Peiro, wouldn't run with her bees. If Dr. Peiro would only give us a variety of mulberries ripening in the fall, I'm pretty sure any strain of bees could be made to take them (not upstairs, perhaps); but in ordinary mulberry season bees mostly have their ideas raised above fruit-juice. And in the fall, who would laboriously pick mulberries when slicing up watermelons is so much easier?



Our Sister Bee-Keepers

Conducted by EMMA M. WILSON, Marengo, Ill.

A Discouraging Season With the Bees

DEAR MISS WILSON:—I promised you once that I'd write you about my bee-keeping, but you see I had such a very unsatisfactory season last year that I felt as though I had nothing good to report. We like to report good things, do we not? But failures have in them an element of defeat, and we would rather not speak of our defeat. I wouldn't.

Up to last season I had always had pretty good success with my bees—nothing to boast of, but just fairly good; but the past summer I got very little honey, and had to feed part back and about 800 pounds of sugar besides. That's something new to me. I always used to congratulate myself when I read of others feeding their bees, on my good

fortune in living so near the Mississippi River, where the bottom-lands always supplied enough pasture to provide the bees with sufficient stores; now I know how to sympathize with the sugar feeders; especially with those having no regular feeders, but who have to go around and hunt up all sorts of kettles and pans, and borrow them of the neighbors and farmers, and then have to lug them back! For, unfortunately, I have no horse; I use the train to take me to and from my out-yard.

I prepared something over 185 colonies for winter. I work for comb honey during the white honey season, and then put on an extra brood-chamber, which I leave on until the beginning of the white honey-flow, when I put on the supers with sections. The past season, however, I worked quite a few colonies for extracted honey, but I do not like it as well as working for comb honey, and if I could manage a team better I'd get some horses to haul the comb honey home, and work almost wholly for comb honey.

The extracted honey I leave at the out-yard, and ship it to market from there.

I want to wish you success in your wintering and a good honey season, you and Dr. Miller. I suppose you are nearly through with your winter work and almost ready for spring.

Cordially yours,

Cassville, Wis., Feb. 15. MATHILDE CANDLER.

We are exceedingly obliged to you, Miss Candler, for so good a letter, even if it is so largely occupied with recording failures. We all have "ups and downs," but it is ever so much pleasanter to tell of the "ups." You have now given us the "downs;" we shall hope for the "ups" from your pen in the near future.

Bees in Fine Condition

We have 8 colonies of bees in fine condition. We had 10 colonies last summer, but one died from being queenless, and one the Hallowe'en sports stole and emptied the bees out on the road. They got about 25 pounds of honey. Last year was the worst for honey since we have been keeping bees. I have been intending to write to the Sisters' department for a long time, but have neglected to do so. I always turn to that page first.

MRS. OTTO C. HOTZE.

Fleener, Ind., March 12.

A Sister's Greeting and Clippings

DEAR MISS WILSON:—Thank you very much for getting in my chat with the Sister's in such nice shape. Also, for sending us all so lovely a New Year greeting. As the day happens to be my birthday, I intend to appropriate an extra share of the good wishes.

I enclose a couple of clippings that may be of interest to you.

With kindliest appreciation of your efforts on behalf of "we sisters," and assuring you of very hearty co-operation on my part, and affectionate greeting for the New Year, which I trust will be blessed to us all—those who win and those who fail—and particularly thanking you for "Sister Ruth's" beautiful poem, I am,

Cordially your friend,
FRANCES E. WHEELER.

The clippings sent by Miss Wheeler are as follows, both taken from the Stock Farmer:

BEES SEIZE AND HOLD A VILLAGE.

A great swarm of bees attacked, seized and held until late in the afternoon the village of Weston-on-Trent, England. An attempt to occupy some tenanted hives having failed, the defeated party made matters lively throughout the remainder of the day. The villagers were compelled to close their doors and windows, as the bees went for everything within reach. Six fowls were stung to death.

DIED SEVERAL YEARS AFTER BEING STUNG.

Mrs. George Danner, wife of a prominent pump manufacturer of Allentown, Pa., and a bee-culturist, died suddenly at Hecktown, of blood-poisoning last week. Several years ago she went to the yard to pick some flowers, when a bee stung her on the wrist. Shortly afterward her hand and arm swelled to enormous proportions, and she suffered great agony. Her case attracted the attention of medical experts from all over the country; but in spite of every recognized treatment, the swelling was only occasionally partially reduced, and finally the poison reached the heart, and death resulted. She was 53 years old, and one of her sons, Norman, was a soldier in the Philippines, where he was seriously wounded.

Sudden death from blood-poisoning, caused by a bee-sting received several years previously, seems rather far-

fetched. Query: Was there any real connection between the sting and the death?



Canadian + Beedom +

Conducted by MORLEY PETTIT, Villa Nova, Ont.

More About Mr. Lowey's Winter Bee-Repository

FRIEND PETTIT:—I have had no experience in cellar wintering. I built my repository in 1885 (I think it was), and put about 6 colonies in—all I had then. It was damp, as it was late, and the sawdust was wet. They did not do very well. I then built the lean-to, and put a stove in, with some fire in very cold weather, and raised the temperature. But I soon increased to a hundred or more colonies. The sawdust became perfectly dry, and has remained so since. I did not need any artificial heat, so I tore down the chimney and let the 8-inch pipe through the end near the roof of the lean-to, out and down with two elbows, for a dark ventilator. The main part has a box about a foot square up through the ceiling, with a cover on top. On the underside of the cover is a notched stick hinged on, by which it can be raised or lowered. The doors between the two parts are open most of the time in mild weather, so by raising the cover on the ventilator there is fresh air coming in. In very cold weather I shut down the cover, and put something over the stovepipe, outside and inside.

You ask if I have wintered bees many winters in this. Yes, about 20, with, I think, good success. I lose a few bees every year, but I don't think it is the fault of the repository. I often have put in some that I did not expect to come out all right—neglected in the fall to see that they all had queens, etc. I found in the spring they had been queenless. I am going to do better. If I have more than I want to winter, I will double them up; look after them early in the fall, etc.

Now, as to the two methods: Having never wintered bees in the cellar I can not say which is the better. I have always thought I would like underground best, on account of controlling the temperature in the spring. I have had bees hang out so the clusters on two hives would meet, and yet they seem to come out all right—usually about April 10.

One thing about it, *it is dry*. The space under the floor is about one foot, with a poor wall which lets in fresh air. However, I wouldn't want that different. Before putting bees in, I put a thin layer of sawdust on the floor. After the bees are put out I sweep up, and all is clean. (I have put very wet sawdust in sometimes, but it soon dries out.) Up till the latter part of March, usually, I can keep the temperature at 45 to 50 degrees, Fahr.

I put the bees in last fall on Monday after the convention at Toronto; the temperature went up to 50 degrees in 24 hours, and remained so until the warm weather in January. The bees were very quiet; they then woke up and got very noisy. The temperature was 60 degrees. I then opened the outside door until it went down so the bees were quiet. I left the door open all night on two nights so far this season. Of course, I shut the door at daybreak. I don't believe in keeping bees in a temperature in winter quarters that they stay *in hives in the light*.

I will be glad when I get the bees outside again. I am a little uneasy about them. I suppose the weather is much the same with you as it is here—very changeable. The prospects are poor for clover. It was muddy to-day, and freezing pretty sharp to-night.

R. LOWRY.
Cherry Valley, Ont., Feb. 5.

Detecting Glucose in Honey

In the January number of the Ladies' Home Journal appears an article in which A. W. Woodman describes methods of detecting adulterants in various food stuffs. Referring to honey and other sweets, he says:

A common adulterant of honey, table syrups, molasses, jellies and jams is commercial glucose, made on a very large scale by treating corn-starch with acid. It may be detected quite easily by the peculiar precipitate it gives with alcohol. For this test it will be necessary to

use strong alcohol—95 percent. Take a clear glass or tumbler about a third full of the honey or syrup to be tested. In the presence of glucose a milky turbidity will be caused, and at the bottom of the glass will be formed a thick, gummy mass, which can be easily collected in a spoon. If glucose is not present a slight flocculent precipitate will be formed instead of the gummy mass, and there will be no turbidity after the test has stood a few moments. It should be borne in mind that the glucose is not to be considered necessarily harmful, but that its presence always indicates a cheaper or low-grade product.

By a simple mistake I got two explanations of the above test from Prof. Frank T. Shutt, Chemist, Central Experimental Farm, Ottawa. The following letter will explain:

ALCOHOL AND BARIUM CHLORIDE TESTS FOR GLUCOSE IN HONEY.

DEAR MR. PETTIT:—Personally I can not speak of the validity of the test in the presence of small quantities of glucose. It is no doubt indicative when the proportion of glucose is at all considerable. Leach, in his recent work on "Food Analysis," writes as follows:

"The presence of commercial glucose is strongly indicated if, on the addition of 3 or 4 volumes of strong alcohol to the honey, a precipitate of dextrin is found. Pure honey should show only a slight milkeness and no actual precipitate when thus treated."

I may add that I do not think there is any simple test which a layman could use with certainty for the detection of glucose in honey, though a precipitate in the diluted honey on adding a solution of barium chloride would indicate traces of sulphuric acid, which very frequently accompanies glucose. The absence, however, of such a precipitate would not in itself necessarily imply freedom from glucose.

Yours truly,

FRANK T. SHUTT, Chemist.

Report for Season of 1905

MR. MORLEY PETTIT:—From 3 colonies we got over 200 pounds of honey and 4 swarms. I have also a large amount of new combs for another year. I lost one colony from being queenless, and did not find it out till too late; it was my own fault. I tried to stop swarming by killing most of the queens (as a man had advised me), and I suppose the cells I left turned out "no good." Oh, I learned a lot last summer.

I am wintering 6 colonies. They were all out to-day, and I think they are doing well. The neighbor I spoke of as having foul brood in his apiary, lost all his bees. I have heard of no others with foul brood. I kept the Richardson 10-frame hive that I started with, made the hives myself and bought the frames. I wanted to go slow at first. The clover and fall wheat are all right at present.

Greenock, Ont., Feb. 20.

JOSEPH CONDY.



Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

"Those Bee-Problems"

That man with those "unreliable glasses" says something about a little dog that "died or run away"—I don't just recollect which the dog did. He also heaves a big sigh as if he feared that "those bee-problems" would never be solved now; but, Mr. Hasty, had you not thought about it that there might be others who might do it?

Then, too, we'uns have been wondering whether the Ohio State University would be so much interested in us if we went there, as some evidently suppose we did, especially in the heart of snowy winter, when it was proposed to venture there. Since then a kind of hankering toward wanting to stay at home and among my own bees has kept me tied down to it, and here I am. Yes, I am a "sure enough" bee-keeper again, with several hundred colonies, to run them all by my *little* self (only 6-3 tall). Of these doings, some may prove good enough for publication some time sooner or later, depending upon when they happen to happen—even if they are only good for some "wit and humor" page.

And, again, in my dabblings with bees, sure enough bees, it is to be supposed that some of the stumbles might happen to be across something of—well—er—of value. It may also happen to happen that some of "those toothsome bee-problems" to which Mr. Hasty refers, and which he would like to see solved (I suppose) might happen. If they

don't, I can already imagine that "Hasty" man jumping up with, "I told you so!"

Two Foul-Brood Inspectors

As assistant in the Department of Entomology and Apriarist at the State A. and M. College, the duty of foul brood inspection fell on the shoulders of the writer at various times since the foul brood law was placed in the hands of the State Entomologist. This gave me a lot of varied experiences, some of them as serious as others were comical.

It was during my inspection work in Southwest Texas, however, that I was aided by a young bee-keeping friend, who, by his services, through his kindness, his good-will and



"BIG BILL" AND "LITTLE BILL"—TWO BEE-INSPECTORS.

his generosity, enabled much work to be accomplished in a short time, than if the labors had fallen to one man. This same young man was none other than Willie Atchley, whom almost every reader knows, and whose picture will be seen here. Willie is the *leettle* fellow in the "rig," while "ye humble *bigger* fellow" towers up on the left of him.

Indeed, this couple was not known by their right names, for 'twas "Big Bill" and "Little Bill" that they were called. Everybody in Beeville knew them by these names.

But in showing the picture of Mr. Atchley, the bee-keepers of Southwest Texas have before them a young man who has been very helpful and instrumental in the work of inspecting the apiaries there, and in locating the diseased apiaries that were destroyed and thus rid of the dreaded foul brood. He is the person who has only lately been appointed as inspector for that section.

Preventing the Introduction of Foul Brood

As foul brood inspector for Southwest Texas, Mr. Willie Atchley, of Beeville, was appointed by Prof. Albert F. Conradi, State Entomologist at the A. and M. College, under whose supervision the Texas foul brood law is. Mr. Atchley should make a good officer. He is a thorough bee-man, and well acquainted among the bee-men of his section of the State. We are hoping that there will not be very much for him to do in the inspection work, however; not that we wish to see him spend his life in idleness, for he is one of those fellows who would find—and, in his case, already has—enough to do; but I am sure that I voice the sentiments of the bee-keepers of the entire Southwest Texas in my wishes. Foul brood is not a much-desired thing, and the less there is to do for the inspector the better for the bee-keepers.

A word of explanation concerning the situation of foul brood in the above-alluded-to section is due the bee-keepers of that part of the State, especially since it seemed necessary to appoint an inspector. Those who are not familiar with the facts of the case, and the situation of the subject, may draw conclusions from the fact of this appointment that are not at all warranted.

Although there is no foul brood there now, there has been trouble at two different times, of bees being imported into that section that were diseased. As the matter has been properly taken care of, and the destruction of the dis-

eased apiaries resorted to, it practically leaves, as above mentioned, very little to do for the inspector for the present. One of the main and most important objects of having an inspector at the most important bee-keeping centers, especially where new comers may bring bees with them, is to guard against any further introduction of foul brood or other diseases as in the previous cases. This can be accomplished much better by having a man at such a place who is thoroughly able to keep up with the information regarding the shipping in, and other movements of bees.

As soon as it is learned that bees are to be brought into this section, arrangements for having them inspected are made, and the bees will not be allowed to be brought until a certificate showing that they are in healthy condition can be obtained. Such is the duty of a district inspector, besides that of inspecting apiaries that may be reported to him for inspection for any reasons sufficient to warrant him to do so; and the bee-keepers should all go hand in hand in this matter and aid this work. In this way they will receive protection, and help protect others.



Doctor Miller's Question-Box

Send questions either to the office of the American Bee Journal, or to DR. C. C. MILLER, Marengo, Ill.

Dr. Miller does not answer Questions by mail.

When to Take Out Cellared Bees

When in the spring is the right time to take bees out of the cellar? I can't find it in any of the bee-books?

MISSOURI.

ANSWER.—It isn't an easy thing to say when is the right time to take bees out of the cellar, and I'd give a pretty penny to any one who could tell me with certainty the best time to take mine out this spring. There has been as much as a month difference between the earliest and the latest of my taking out, there being that difference in seasons. There must be more or less guessing about it so long as one never knows in advance just what the weather is going to be. So long as they are in good condition in the cellar, and there is nothing for them to do outdoors, there's no hurry about taking them out. If you will watch the blooming of red maples, willows, or other trees upon which they work in your neighborhood, you will generally find it best to take them out at the time of such bloom, but not even then if the weather appears unfavorable. So far south as you are—in Missouri, 39 degrees—are you sure it is advisable to cellar bees at all?

Transferring Bees—Best Bee-Book and Comb-Honey Hive

1. I have 3 colonies to transfer in the spring. When and how would you transfer them?

2. What is the best bee-book for a beginner?

3. What kind of hive do you think is the best for comb honey?

MINNESOTA.

ANSWERS.—1. A very satisfactory way is to wait till the first swarm issues, hive it and set it on the old stand, set the old hive close beside it; a week later move the old hive to a new place, and 2 weeks later still—or 3 weeks from the time of swarming—transfer in the manner directed in your bee-book.

2. All of those advertised in the American Bee Journal are good. After you get familiar with one, if you mean to do much with bees it will pay you to get another.

3. The 8-frame hive is good if you pay a lot of attention to the bees, but unless you expect to give them very close attention take the 10-frame hive. Any plain hive with frames $17\frac{1}{2} \times 9\frac{1}{2}$, outside measure, is good whether dovetailed or not.

Throwing Out Bee Larvae or Pupae—Caucasian Bees, Etc.

1. I commenced last spring with 2 colonies, increased to 8, and got 150 sections of nice honey, which, I think, is good for a beginner. Three of my increase I caught. I had one destroyed by moths, and one lost its queen, which I doubled with another, so I have 6 left.

2. Last summer all of my bees threw out a good many bees in the larval stage. The only way I could explain it was the moth destroyed some of the brood, for, on examination, I found holes in the brood-combs as though something had been eating them. Am I right?

3. I see a good deal of late about the Caucasian bees, some claiming they won't sting and are good; others claim they are no good. What is the truth about these bees?

4. Bees usually go to work here in March after a few warm days,

as we have lots of maple and willow trees, and some wild gooseberry. Do bees get honey from those trees, or is it all pollen?

5. Does it do any harm to open a hive in the winter, on a warm day, if you don't disturb any of the frames or bees, but simply look at the top of the frames?

6. Is it best to winter bees on the summer stands in this locality—about 55 miles south of Chicago? I have a nice place, sheltered on the east, north and west sides, and open on the south to the sun.

ILLINOIS.

ANSWERS.—1. You certainly did well; but you must not feel discouraged if you do not repeat the experience. Other seasons may not be so good. A few colonies in a locality ought to average better than when you increase to a larger number.

2. When bees are starving, they suck out the juices of the larvae and throw out the skins. I suspect, however, that in your case it was the pupae instead of the larvae that were thrown out, and that you are right in blaming the wax-worm for the trouble.

3. The truth is about as you state it, and we must wait for further information before we know which is right. It looks a little as if there was quite a variation in Caucasians.

4. Both pollen and honey.

5. Yes, it is a bad thing to disturb bees unnecessarily; and I wouldn't even uncover the frames at a time when bees can not fly, unless there was danger of starvation.

6. They ought to winter well in the cellar, and yet sheltered as you say they are they may also do well outside. It would not be a bad plan to try some each way, and then you could decide better than any one else.

Taking Out Cellared Bees for a Flight—Mice in Hives

1. I am now wintering 35 colonies in what I call a very good cellar—concrete walls all around and concrete bottom, with good circulation. Is it the right thing to put colonies outdoors on a nice, warm, sunshiny day, and then put them back in the evening? I see some advocate keeping bees as quiet as possible—don't disturb them until spring opens. But, on the other hand, don't you think it is a very good plan to give them a flight on such a day? They will cleanse themselves and be nearly as good as when first put in.

2. I have been troubled somewhat with mice. They are bad when they get started. I have lost one colony by their work. They did not eat much honey, as it was one-half full, but they ate the bees, leaving heads and wings—not a live bee in the hive when I found it. The entrance was stopped up, and a nice nest of 5 young mice in it. Of course I fixed them, killing an old one, and 3 got away. What shall I do in such a case? I am afraid they will kill all the rest.

MICHIGAN.

ANSWERS.—1. As you intimate, opinions are divided. I've tried both ways, and I can't decide which is best. The objection urged against taking out for a flight and returning is that it starts to breeding and makes the bees uneasy. On the whole, if they are doing well in the cellar, it may be as well to leave them until taken out for good; but if they are suffering from confinement, as shown by diarrhea, give them a flight, and then return them.

2. Don't be too sure the mice killed those bees. It is just possible the mice only ate them after they were dead. Neither is it likely the mice will kill all the rest. You can close entrances with coarse wire-cloth, three meshes to the inch. That will allow the passage of bees, but not mice. Even if you fasten a mouse into one of the hives, that's better than to let it have free run.

Moving Bees—Preventing More Than One Swarm—Feeding Bees—Changing Queens—Color of Comb Honey—Getting Rid of Ants in Hives

1. As I want to move my bees this spring, would 2 feet apart be too close for each hive?

2. What is an effective way to keep my bees from giving more than one swarm per colony?

3. One of my colonies gave more honey last year than the rest of them. Should I save these drones and kill out those that are in the other colonies?

4. What time next month can I open the hives to see if the bees are well supplied with honey? and about how much should each colony have? If they have none, what should I feed them, and how much?

5. I would like to better my bees by giving them Italian queens. Could I do this at any time in the summer? If not, when?

6. How can I see, by looking into the hives, when a swarm is ready to come out, as I would like to use the Alley trap?

7. How can I tell by looking at comb honey whether it is light, amber or dark? What are the shades of the cappings?

8. How can I keep the little red ants out of the hives in the summer-time? I have tried sulphur with no good results. Do they do any harm in the hives?

WISCONSIN.

ANSWERS.—1. That depends. If there are plenty of trees or other objects to help mark their locations it will be all right. If the ground is perfectly level, and nothing to help to locate the hives, there will be mistakes in entering hives. If you want to save room, instead of putting them regularly 2 feet apart, put the first two close together, leave a space of 3 feet, then two more hives, and so on, putting the hives in pairs, with 3 feet between each two pairs. With that arrangement you'll get more bees on the same ground, and at the same time there will be less mixing.

2. When the prime swarm issues, hive it and set it on the old

stand, setting the old hive close beside it. A week later move the old hive to a new location some distance away.

3. It will be an excellent plan.

4. Unless you are very much afraid some of them are now starving, don't open a hive until a day when the bees are flying. If you think a colony is starving, go at it right away—may as well kill some of the bees by disturbance as to have all starve. Better see that each colony has 10 pounds of honey, or more, to carry them through till they are gathering. If they haven't that much, feed to make up the deficiency. Give them combs of sealed honey. Probably you haven't any. Then feed candy. Perhaps still better, take C. P. Dadant's plan: Smear candied honey over the top-bars back of the cluster, pushing some of it close to the cluster and making sure that the bees get started on it.

5. You can do it at any time, but it will be as well not to be too early. Queens reared too early are not so good, and prices are higher early.

6. You can make a pretty safe guess by looking for queen-cells. A swarm is likely to issue as soon as the first cell is sealed.

7. You can't tell by the cappings. The lightest honey may have dark cappings if long enough in the care of the bees, and the darkest honey may have light cappings. Hold the comb up to the light of the window and look through it, and you can tell pretty well the color of the honey contained. Of course, you must make some allowance for the comb. If it is badly discolored it will make white honey look darker than it is.

8. They probably do little harm beyond annoying the bees, and the bees are competent to take care of them. They go to the hives and make their nests there chiefly for the warmth afforded. Some say borax sprinkled over the places they stay will drive them away. If you allow no lurking places, over the hives where a bee can not go as well as an ant, the bees will keep them away.

You are a good questioner, and your questions show intelligence, only some of them show that you have no text-book of instruction about bees, or else that you have not studied it very carefully. This department is intended to supplement the text-book, not to replace it, and it is hardly fair to occupy room with matters fully given in the books. If you will get a text-book, and study it carefully, I'm sure you will thank me for advising you to do so, for it will be money in your pocket.

Sweet Clover Seed

I would like to get some sweet clover seed. Can you tell me where to find it?

KENTUCKY.

ANSWER.—I don't know where you can get sweet clover seed, but about this time of year you ought to find it advertised in this and other bee-papers. It is reported unusually scarce this spring, and that seems a little strange, seeing the great quantity of seed each stalk produces. One reason, probably, is that while there is a great quantity of sweet clover throughout the country, it is so scattered that the seed would have to be gathered by hand. Still, there are a good many patches thick enough to be mowed.



Convention Proceedings

Report of the Wisconsin State Convention

BY HARRY LATHROP.

[Continued from page 218.]

The writer read the following paper on

A GOOD BEE-CELLAR

In this Northern climate there are two ways of wintering bees successfully. One is by having self-protecting hives (and they would be all right if it were not for the expense); but it is not my purpose to treat of them but of the other, and, I believe most reliable method of wintering, a good cellar.

It has been customary with a good many to use any sort of cellar, be it ever so damp, ill-smelling and unfit, as a wintering-place for the bees. I think this has been a great mistake, and that bee-keepers at large have lost heavily in bees, and consequently in money, by not going to the expense of providing the very best accommodations that could be produced.

A great deal of effort has been made to improve the bees and to get them into good working shape after the season commenced; but a quart of bees in a hive that contains a much larger bunch of dead ones, and mouldy, damp combs, is a poor start. And yet the colony wintered, did it? Only part of it. Better winter quarters would have brought them through in fine shape. There would have been a strong force

of bees—dry, sleek, healthy, able before they died off, to leave a rousing colony of younger workers. I have lost enough from poor-wintering quarters to appreciate the gravity of this question. It is one of life and death, and means much to the man who is to make his living, or any part of it, from honey-production in Wisconsin.

What we want in a cellar is purity of air, measurable dryness, and an even temperature which will remain at 40 to 45 degrees above, never going below 40 nor above 50. The labor and expense required to secure such a cellar depends greatly upon the character of the soil and location in which it is to be built. Some locations are very much better adapted than others. In a bank of pure dry sand, such as may often be found along the river valleys of this State, it is an easy matter to make a good cellar. The room may simply be boarded up inside; the loose sand will make an excellent floor, and, with a couple of doors and a wooden tube for a ventilator, one has a cellar that is all right.

But if it is desirable to locate a cellar where the ground is a damp, heavy clay or muck, and where there is no rising ground to aid drainage, the task of providing a suitable wintering-place is not so easy. But if the ultimate object is kept constantly in view, that is, the requirements of a good cellar, I think all obstacles can be overcome, but it will take more work and better material.

I have a cellar which I built in a side hill the past season. The hill is composed of loose layers of limestone, and we got more than enough good building stone out of the pit to make all the walls. The floor of this cellar is the natural rock, and the drainage is perfect without any special arrangement. The cellar proper is entirely under the ground, but the ante-room by which entrance is had through double doors, is only partially under ground. The path into the cellar is on a level with the floor, so as to avoid going up and down steps with the hives. This is a desirable feature, but not a necessary one. For packing overhead I used dry leaves on the floor, and over all a good shingle roof. The upper part of the ante-room is packed with leaves also, as I wish it to be a good protection to the main cellar.

Were I to locate a cellar in level, damp ground, I think I would only sink it down about half way below the general level of the ground, then bank up around the walls to make a mound. It would require only a few steps to get down to the cellar bottom, and would be much easier to drain. I would lay tile under the bottom and along the sides of the walls and arrange to carry off all water from the eaves. Such a cellar, if properly constructed, would be dry and warm, even if located in a damp place.

Two feet of dry earth makes a good absorbent covering for a cellar, the earth to be protected by a good roof; but it has a tendency to rot out the ceiling, and in a certain number of years will break down and the upper part of the cellar will have to be rebuilt. I have therefore conceived the idea of using lighter material. Dry sawdust, leaves, or clover-hulls, would be all right, I think; but I have not had sufficient experience to be able to judge of the comparative merits of different materials. I think, though, that an absorbent packing is better than an ordinary room overhead having tight floors, which would not facilitate the moisture escaping.

My only ventilator is a small wooden chimney leading from near the cellar floor up through the roof; although, in the last cellar I built, I have an arrangement for letting warm air in at the top of the inner door and drawing out the cooler air at the bottom. This is intended to be used in case the cellar should get too cold during some very severe and continued cold weather, at which time I could place a small stove in the ante-room and change and warm the air in the cellar. I do not expect to do this in any ordinary winter, and perhaps not at all.

I am somewhat opposed to the practise of letting in air directly from the outside, and think that air enough will come in through the stone walls. If the bees are wintering perfectly, they are quiet and do not consume much air. Don't think, though, that they cannot be smothered. I once placed 50 colonies in a small, double-walled room without sufficient ventilation; the weather changed, the temperature of the room went up to 60 degrees, and before I knew it over half the bees were out of the hives, some dead on the floor, and bushels clustered in the upper corners of the room. (That was nearly 20 years ago.) I took the colonies out of that place and managed to get 25 through in a weak condition. I made \$400 from the 25 nuclei that splendid honey-year. What would I have made from 50 properly wintered colonies? If those bees had been in a cellar, somewhat larger than the pile of hives containing the bees, a temperature of 60 degrees

would have done no harm. So you see, they can be smothered under certain conditions.

As this paper will invite discussion, I think it is unneces-

sary for me to prolong it or try to say all that could be said regarding the construction of a good bee-cellars.

(Concluded next week) HARRY LATHROP.

Reports and Experiences

Few Dead Bees So Far.

I put most of my bees on their summer stands yesterday. There were very few dead bees, and the hives were almost as heavy as when they were put into the cellar in December. It was a fine day and they had a good flight. I would put out the balance of only 6 colonies, but the wind has shifted to the northwest so they could not fly out if put on the outdoor stands. Lyons, Kas. Feb. 20. G. Bohrer.

Likes the Right Kind of T-Super.

On page 159 is an article written by F. Greiner, on supers, section-holders, etc. But all that I object to in particular in his well-written article is in regard to his not very well-founded opinion in regard to the T-super. I have used in the production of comb-honey several different kinds of supers, and, so far as my experience goes, I have never used any supers that gave better results than the T-super. It is simple in construction, easily filled, and also convenient to empty.

Before removing the honey from the super, take a curved-bladed knife, not too sharp, and scrape all the bee-glue and wax from both the top and bottom of the sections, which can be easily done while the sections are firmly held in the super. Then remove the follower and take a screwdriver, or some suitable tool, place it between the sections and outside case, tapping gently with a light hammer both along the side and ends, so, if this is properly done, all you then have to do is to place a board about the same size of the super on the upper side. Then invert the whole, lift the super off, give each T-tin a light tap or two with the hammer and the work is done, except removing a little propolis that may be under the tins. This can better be accomplished by scraping while the sections are still in a group. I have never been annoyed with leaking sections after this manner of procedure.

Now, if you are provided with a super-filler, as described in Dr. Miller's book, "Forty Years Among the Bees," you would not exchange the T-super for any other make on the market.

If these few thoughts, hastily jotted down, will be of any interest to any one, I will be very glad.

Although the pursuit of apiculture for the last two seasons has been very discouraging, yet I have not altogether lost all hope that there is a better day dawning for bee-keepers in this locality. I have 95 colonies in the cellar, but I fear they will not come out in very good condition. Samuel H. Hitt. Elizabeth, Ill. Feb. 22.

Value of Bees to Alfalfa.

I am a beginner in the bee-business, although years ago I had considerable experience with bees, but never with movable-frame hives. I bought one colony last May, increased to 3 by fall, and then I cut 3 bee-trees and saved the bees, which gave me 6, all in dove-tail hives; 3 of them had to be fed, which I did in October.

About the middle of November, 1905, I bought 10 colonies of black bees at a sale. When I got them home I found that 2 of them did not have stores sufficient to feed them till Christmas. The weather being warm, I soon fed them, using a Miller feeder.

I packed my bees by making boxes about 4 inches longer and wider than the hives, having no top or bottom, and set this over the hive, and filled the space with old papers, about an inch thick on all sides. I then laid about the same number on top of the hive, and over all I put a cover made

to turn water. The bees are wintering in fine condition; they were flying nearly every day last week.

We had rather a poor season for honey last year on account of the extreme drought the latter part of the summer. Alfalfa practically produced no honey after July 1.

We had quite a striking example, in this county, of the value of bees to alfalfa. Our creek bottoms are especially adapted to alfalfa culture, and a larger acreage is sown on one of the creek bottoms, where large quantities of alfalfa seed is raised. On one farm where no bees were kept the yield of seed, in 1905, was two bushels to the acre. On another farm, on the same bottom, one mile from the first, where only 3 colonies of bees were kept, the yield of alfalfa seed was between 4 and 5 bushels to the acre. On still another farm, where about 20 colonies of bees are kept, the yield was between 7 and 8 bushels per acre; and 2 miles below, without bees, the yield again dropped to 2 bushels. H. F. Hillebrandt. Osborne, Kan. Feb. 14.

CONVENTION NOTICES.

Utah.—The Utah Bee-Keepers' Association will hold their spring convention in the Mayor's office, in the City and County Building, April 6, at 10 a.m. Among other questions of interest to be considered will be the best approved methods for producing and disposing of bee-products. All are cordially invited to come and bring their friends.

G. E. GARRETT, Sec. E. S. LOVSEY, Pres.

Michigan.—The Northern Michigan Bee-Keepers' Association will hold its next annual meeting at Kalkaska, Mich., Wednesday and Thursday, April 4 and 5, 1906. Generous prizes are offered for certain exhibits. W. Z. Hutchinson, E. D. Townsend and Geo. H. Kirkpatrick, the President, will read papers. Special hotel rates are given by the Manning House. Send to the Secretary for a copy of the announcement, list of prizes offered, etc. Then attend the convention if you possibly can do so. IRA D. BARTLETT, Sec. East Jordan, Mich.

North Texas.—The annual meeting of the North Texas Bee-Keepers' Association will be held at Blossom, Tex., Wednesday and Thursday, April 4 and 5, to which all bee-keepers are invited. There will be no hotel bills to pay. On the program are the following: "Best Races of Bees," W. H. Laws and Dr. R. P. Davies; "Foul Brood," Louis H. Scholl; "Which is the Best for North Texas, The Production of Section or Bulk Comb Honey?" R. C. Abernathy and Dr. R. P. Davies; "Extracted vs. Comb Honey for North Texas," R. C. Abernathy and Dr. R. P. Davies; "Is a Bee-Keepers' Association a Necessity?" W. H. White; "Is the Combining of Bee-Keeping with Poultry-Raising Profitable?" L. C. Lancaster; "Best Honey-Plants of North Texas," J. M. Hagedorn; "Best Hive for North Texas—8, 10 or 12 Frame," W. H. White; "How Best to Manage Our Bees for the Greatest Profit," E. A. Ribble. Question-Box. W. H. WHITE, Sec.

Connecticut.—The 15th annual meeting of the Connecticut Bee-Keepers' Association will be held in the Capitol, Hartford, Room 50, Wednesday, April 11, 1906, at 10:30 a.m. All bee-keepers should make an extra effort to attend this meeting. Try to bring a friend also. Topics for discussion: The best method for putting starters in sections. Your best way to prevent swarming. Swarming devices, pro and con. Large and small hives compared. What is the best way to increase? Best use to make of second swarms. How did your bees winter? How many colonies have you? What do you do with sections after removing them from the hive? Handling the divisible brood-chamber vs. single frames. How do you manage the colony after the

first swarm has left? How do you ripen or thicken extracted honey? Can new combs be made out of old ones by cutting them to one-half inch thick or less? and would they be as good as new ones?

Please bring something for the exhibition table, or a question for the question-box.

Mrs. E. E. SMITH, Sec. Watertown, Conn.

The Rietsche Press.—Those who have bought Rietsche Presses from me have probably found out that by following the directions given it is easy to make heavy foundation, but rather difficult (though not impossible) to make foundation thin enough for sections. The directions given as to the kind of lubricant to be used were not very definite.

Many kinds of lubricants are recommended by the European writers; but all the best contain alcohol. The best two are a mixture of alcohol and whey (from the cheese factory) half and half, and a mixture of water, honey and alcohol, about equal parts. For obvious reasons, I did not care to advise the use of alcohol, so I have from time to time tried every thing else that I could think of, but without success.

What puzzles me most is the assertion that the making of foundation with the Rietsche press is so easy, and the foundation as fine and as thin as any made with rollers, even by the Weed process. At fairs, the Rietsche foundation has often carried the first prizes against all others.

I finally realized that to make thin foundation easily and rapidly, the use of alcohol as a lubricant is indispensable. But a trial soon showed me that wood-alcohol would do just as well as any other. I think water, alcohol and honey, about equal parts, will do; perhaps a little more alcohol and a little less water. The wood-alcohol is cheap, and can be bought from any dealer in paints and varnishes. As it evaporates rapidly, only a little should be mixed at a time.

In comparing the comb foundation made with the Rietsche press, with the Weed foundation, two things must be taken into consideration. One is, that the transparency of the Weed foundation makes it look much thinner than it is. The other is, a piece of foundation made on the Rietsche press may be, and in fact is, thicker than a piece made by the Weed process, and yet is fully as light. This is due to the fact that the thinness of the Weed foundation is due largely to the enormous pressure to which it is subjected.

I intended to try the Rietsche foundation in sections extensively last summer, but the failure in the honey-flow prevented me from doing it. A little was done, and, as far as it goes, it shows that the bees take the Rietsche foundation in preference—probably because it is much softer. The few sections that were completed seem to show that the bottom of the cells had been thinned down; at any rate, the comb was not any harder than the natural comb; while the Weed foundation, no matter how thin it is, is somewhat tougher. It must be admitted, however, that the difference is not considerable.—ADRIAN GETAZ, Knoxville, Tenn.—(Adv.)

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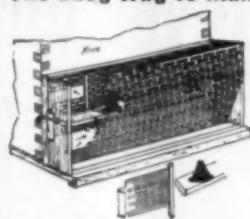
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13A4t Please mention the Bee Journal.

WANTED MEN TO LEARN BEE-KEEPING

We can take live young men who really want to become expert bee-keepers, give them employment in our apiaries, and teach them as much as they can learn in one season. In applying state age, height, weight, and previous occupation. None but those of good moral habits need apply. MORLEY PETTIT,

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WHEN YOU NEED QUEENS

And want your order filled by return mail with the best Queens that money can buy, we can serve you. Queens are healthy and prolific; bees the best of workers. Try our fine strain of 3-band Italians. Tested, \$1.00 each. Untested, 75c; \$8.00 per dozen.

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\$298

This beautiful full angle steel Bed, substantially made, finished in White Enamel with polished brass knobs, in four sizes—will give you complete satisfaction. At \$2.98 it is a wonder and is cheaper than your home dealer can buy it. This steel Sanitary Bed Couch is an ornament to any room—cannot be told from an ordinary couch; can be quickly converted into a comfortable sanitary bed, finished in gold and aluminum. \$4.00 makes this a bargain you should not miss. It will practically add another bed room to your home. This solid oak Extension Table is a real bargain. Never before has there been offered so large and handsome a table for so small a price. You must see it to appreciate its true value. Finished in golden oak and is the best dining table for the price you ever saw. Send \$4.98—if it don't please you we take it back and refund your money. This handsome, well-built 3-section Book Case will put your library on a new system. Can add to it at small expense, as the number of your books increase. Comes in quartered oak, mahogany or plain oak finish—all hand rubbed and polished. Complete with three sections, base, cap and dust-proof

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We want to demonstrate in this advertisement how you can make money by buying furniture direct from us and saving all middle profits. Compare these prices with what your dealer asks you and remember—we pay the freight. You cannot match our qualities or our prices anywhere else.

STEEL SANITARY BED COUCH



glass doors—\$11.85. This Refrigerator is made of ash, with quarter sawed oak panels, golden finish, solid bronze hinges and lock, zinc lined, removable galvanized iron ice rack and flues, with slide adjustable provision shelves. A beauty and a bargain for \$7.90. This high grade, high arm, 3-drawer, ball bearing, drop head Sewing Machine, guaranteed for twenty-five years, is the biggest sewing machine bargain ever offered at our price, freight paid—\$15.25. Order any article listed in this advertisement on our positive guarantee of satisfaction or money back. We stand back of every sale and every article we ship out. They must be exactly as we representing machine catalogs—see how we save you money all along the line.

Co-Operative Society of the
National Supply Co.,
Lansing, Mich. Chicago, Ill.

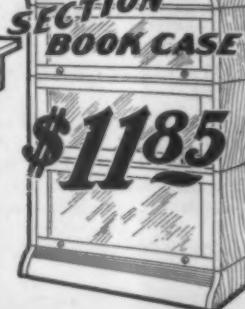
SOLID OAK EXTENSION TABLE



13C

3 SECTION BOOK CASE

\$1185



REFRIGERATOR

\$790



DROP HEAD SEWING MACHINE

\$1525



1/2 Saved on Your Groceries

Stop paying double prices for groceries—you are throwing money away. Our "Factory to Family" plan of buying every day groceries such as tea, coffee, soap, flavoring extracts, baking and washing powders, etc., makes it possible for you to save **half** on your grocery bill. By buying direct from us—the makers—you save the wholesaler's, jobber's and dealer's profits and that's the reason why we can give you a 25 cent can of **guaranteed Pure Cream Tartar Baking Powder** for 12½ cents; or good Laundry Soap at 2½ cents a bar for which you pay 5 cents, and on everything else we make we save **half** regular dealer's prices. Let this big saving worth taking advantage of? We guarantee the quality of our goods, in fact, let you use them 30 days and refund your money if not satisfied. If you prefer Premium, our catalog contains a fine line of beautiful things for the home which you can get with out extra cost, such as Morris Chairs, Couches, Rockers, Book Cases, etc.—everything in the way of household furnishings. If you order \$5, \$10 or \$15 worth of groceries at list prices (same as you now pay your home dealer) we give you a premium of equal value to your order. In this way you can furnish your home without extra cost. Ask about our "Club of 10 Plan"—and also for our large free Furniture Catalog and Style Book.

CROFTS & REED, 916 Austin Avenue, Chicago

Mention Bee Journal when writing.

Tennessee-Bred Queens

All from Extra-Select Mothers

3-band from Imported Dark Leather, Moore's Long-Tongue, or my own. Goldens from Laws, Doolittle's or my own. Caucasians and Carniolans from direct Imported.

AFTER APRIL 15TH.

Italians Before July 1st	After July 1st			CARNIOLANS			CAUCASIANS		
	1	6	12	1	6	12	1	6	12
Untested	\$.75	\$ 4.00	\$ 7.50	\$.60	\$ 3.25	\$ 6.00	\$.85	\$ 4.50	\$ 8.00
Select Untested	1.00	5.00	9.00	.75	4.25	8.00	1.10	5.50	9.50
Tested	1.50	8.00	15.00	1.25	6.50	12.00	1.60	8.50	15.50
Select Tested	2.00	10.00	18.00	1.50	8.00	15.00	2.10	10.50	18.50
Straight 5-band Golden Breeders					1-frame Nucleus (no queen)				\$1.50
Select Golden Breeders					2-frame	"			2.00
" 3-band					3-frame	"			2.50
" Carniolan					4-frame	"			3.00
" Caucasian					1 full colony without queen in 8-frame dovetailed hive				6.00

Bees by the pound in light shipping-boxes, \$1.00 per pound.

Select the Queen wanted, and add the price to the above prices.

Discounts on large orders. Contracts with dealers a specialty. No bee-disease has ever been in this section.

13Dtf

JOHN M. DAVIS, Spring Hill, Tenn.



Have You Passed the Experimental Stage?

Most bee-keepers have been convinced that when time and material are figured, it pays to buy hives, and the best is not only as cheap, but—

The Best is the Cheapest!

The Elgin Hive excels in many ways—no nails to drive—no dovetails—can be taken apart at any time.

Many are using them. You should be. Write to-day for catalog, etc.

We sell full line of SUPPLIES.

The National Supply Co.
ELGIN, ILL.

WANTED

Young man to take care of an apiary of 300 colonies, and carefully pack bee supplies for shipping. **TRESTER SUPPLY CO.**, Lincoln, Neb.

We Sell Root's Goods in Michigan

Let us quote you prices on Sections, Hives, Foundation, etc., as we can save you time and freight. Beeswax Wanted for Cash.

M. H. HUNT & SON,
Bell Branch, Wayne Co., Mich.

Queen Incubator and Brooder—Twin Nucleus-Box MAINLY FOR QUEEN-BREEDERS

INCUBATOR AND BROODER allow the bees access to the cells and queens at all times. (Patented July 7, 1903.) Price, \$5.00.

TWIN NUCLEUS AND MATING BOX has control of the queen by a 3-hole wheel on the outside, with one hole wire-screened, one hole covered with queen-excluding zinc, and the third hole to regulate the size of the entrance. (Patent applied for.) Price, \$1.00.

CYLINDER CAGES, postpaid, each, 10 cents. QUEEN-CELLS, 100 mounted, with sample of Cylinder Cage (sent postpaid), for 75 cents.

BREEDING QUEENS, after May 1st—Italian, Imported and Golden Italian, and Carniolan—\$2.50 each. Orders booked now and filled in rotation. Send for free Circulars. 7Dtf **ARTHUR STANLEY,** Dixon, Lee Co., Ill.

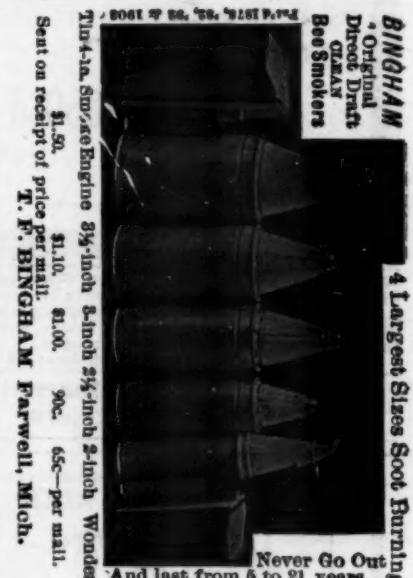
Root's Bee-Supplies

You know what this means. Four carloads of New Goods on hand. Our business increased last year 100 percent over 1904. This is a proof that we are saving our customers money. Try us. Low Freight Rates from Toledo. Large Discounts—that tells the story. Our 80-page Catalog is sent free.

GRIGGS BROS.

521 Monroe Street, TOLEDO, OHIO.

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Never Go Out
And last from 5 to 21 years

OTISVILLE, Pa., Jan. 18, 1904.
Dear Sir:—I have tried almost everything in the smoked line; 3 in the last 3 years. In short if I want any more smokers your new style is good enough for me. I thank the editor of Review for what he said of it. Those remarks induced me to get mine.

FRED FODNER.

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If you want the Bee-Book
That covers the whole Apicultural Field more completely than any other published, send \$1.20 to

Prof. A. J. Cook, Claremont, Cal.,
FOR HIS

"Bee-Keeper's Guide."

Liberal Discounts to the Trade.

Send to
JOHN W. PHARR
Bercilair, Tex.

He will furnish at the same prices as last year: Tested, \$1; Untested, 75c; 5 for \$3.25; 10 for \$6; 15 for \$8.25; 25 for \$12.50; 100 for \$45. He breeds Goldens, Carniolans, and 3-Band Italians. Also 1, 2, and 3 frame Nuclei and full colonies. Prices given on application. Pharr pays the freight, and guarantees satisfaction on all Queens. To do justice and judgment is more acceptable with the Lord than sacrifice.—(Prov. 3:21.)

5Atf
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C Every farmer knows the value of a farm telephone, but he is not in a position to know which is the best 'phone to buy. It's a good deal like buying a watch. The outward appearance of all telephones are very similar. But how about the works inside? That's the part you want to know all about before you buy. We have published a book about telephones.



C It tells "How to Buy the Right 'Phone." This book tells the reasons why the "EACO" 'phones have clearer, stronger talking qualities than others. It tells why "EACO" 'phones are better adapted to the use of farmer's than others. It tells how to organize a Farmer's Telephone Company and how to build a practical efficient working line that will be a source of pleasure and profit every day in the year.

C "EACO" 'phones are the favorite farmer's telephone because they are made handsome, strong and durable. Subscribers can be called up whether the receiver is on the hook or not, provided all the phones are fitted with our X. P. Condensers. "EACO" farm 'phones are especially made for heavy work on crowded lines and aside from being substantially made are low in price. Get our book mentioned above and read how to start and build a farm line. Telephones are a necessity to every farmer, and every live farmer is getting in line as fast as possible. Write today.

ELECTRIC APPLIANCE COMPANY
Dept. A Chicago, Ill.

Bees, Queens and Bee-Supplies

We manufacture standard dovetailed beehives and supplies, cheaper than you ever bought before. Our Queens and Bees stand at the head in quality. Untested, 75c each; \$4.25 for 6, or \$8 per doz. Tested, \$1.25 each; \$12 per doz. Select Tested, \$1.50. Special prices to dealers in large lots on application. State Agents for Dittmer's Foundation. Catalog free.

THE BEE & HONEY COMPANY
(WILL ATCHLEY, Prop.)
Beeville, Bee Co., Texas.

Please mention Bee Journal when writing Advertisers.

CHARLES MONDENG SECTION MACHINE



is covered by two Patents. With this wonderful invention the cost of making Sections may be reduced to \$1.15 per 1000. If such Machine will interest you, write for further information. Do not write about it unless you mean business.

BEE-SUPPLIES AND QUEENS

My Catalog for 1906 is now ready for distribution. I am the Northern Headquarters for Adel Queens and Bees, and good, honest Bee-Keepers' Supplies. If you have not received my Catalog, write for it. Address,

CHARLES MONDENG,

180 NEWTON AVE., N., MINNEAPOLIS, MINN.

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BEE-KEEPERS

Send for our 1906 Free Illustrated Catalog. Good Goods, Low Prices and Prompt Shipments are what you get if you send your orders to—

PAGE & LYON MFG. CO.

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Let Us Send You Our Book.

about good wheels and good wagons that will save you a lot of work and make you a lot of money—the

ELECTRIC STEEL WHEELS

— and the —

ELECTRIC HANDY WAGON.

By every test, they are the best. More than one and a quarter millions sold. Spokes united to the hub. Can't work loose. A set of our wheels will make your old wagon new. Catalogue free.

ELECTRIC WHEEL CO., Box 16, Quincy, Ills.



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BANTA Incubators & Brooders

Backed by 14 Years
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poultrymen all over the world. No guesswork. They are automatic in regulation and ventilation. Fully guaranteed to give YOU satisfaction. Send for free book. **BANTA-BENDER MFG. CO.**, Dept. 24, Ligonier, Ind.

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THAT GROW

Best quality. Good bearers. Low prices. Apple, 4c; Plum and Cherry, 12c; Peach 4c; all budded; Concord Grapes

2c; Vincent, 2c; Sweet, 2c; Red, 2c; Liqueur, 2c; a 1000 up.

Freight paid on trees. Catalogue, English or German, free. Write for it today. Address

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Carl Sonderrecker, Prop.,
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We manufacture everything needed in the Apiary, and carry a large stock and greatest variety. We assure you the best goods at

LOWEST PRICES

and our excellent freight facilities enable us to make prompt shipments over 15 different roads, thereby saving you excessive freight charges as well as time and worry in having goods transferred and damaged. We make the

Alternating, Massie, Langstroth and the Dovetail Hives

Our prices are very reasonable, and to convince you of such we will mail you our free illustrated and descriptive catalog and price-list upon request. We want every bee-keeper to have our Catalog. **SPECIAL DISCOUNTS** now. Write to-day.

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Root's Goods at Root's Prices

Everything used by Bee-Keepers.
POUDER'S HONEY-JARS. Prompt Service.
Low Freight Rates. Catalog Free.

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I pay highest market price for beeswax, delivered here, at any time, cash or trade. Make small shipments by express; large shipments by freight, always being sure to attach your name to the package. My large illustrated catalog is free. I shall be glad to send it to you.

WALTER S. POUDER,

513-515 Massachusetts Ave., INDIANAPOLIS, IND.

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BEE-KEEPERS' AND POULTRY SUPPLIES

LEWIS' BEEWARE

is so well known it needs no introduction. 2 percent
Discount on Bee-Supplies for March.

Beeswax wanted—28c cash, 30c when taking bee-supplies in exchange.
Extracted Honey For Sale. Prices on application. Sample, 10 cents.

**Cornell Incubators, Peep O' Day Brooders
and Cornell Chick Machinery ARE UNEXCELLED**

The 1906 Cornell Incubator is superior to anything heretofore put on the market.

New 1906 Catalog for either line Free.

If you want orders filled PROMPTLY
AT FACTORY PRICES, send your order to

YORK HONEY AND BEE SUPPLY CO. (Not Inc.)

H. M. ARND, MGR.

141 Ontario Street, - CHICAGO, ILL.

Long Distance 'Phone, North 1559.

ITALIAN BEES in modern hives for sale, f.o.b. Chicago.



BEE-SUPPLIES

Everything the bee-keeper needs. Distributing house for Lewis' Goods at Factory Prices. Now is the time to buy for next season.

Discount for Early Orders

FINE EXTRACTED HONEY in cans or barrels. The best the world can produce. Samples 8 cents, to pay postage and packing. How much can you use? Prices quoted quick on the quantity you mention.

We buy BEESWAX at all times in the year. Send for our Catalog and "Special" —free.

C. M. SCOTT & CO. 1004 EAST WASH. STREET
INDIANAPOLIS, IND. ++ ++ ++

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Beautiful Flowers FREE

25c. to pay the cost of packing and postage. You will receive this Grand Collection of Beautiful Flowers, and our New Seed List, the only liberal offer ever made, and a Coupon Check that will give you one of the finest Farm Papers published, by sending for this grand offer:

25 Packages Seed

1 pkt. Snowball Aster.	1 pkt. Morning Glory.
1 pkt. Apple Blossom.	1 pkt. Mixed Calliopsis.
1 pkt. Mixed Portulaca.	1 pkt. Mixed Calendula.
1 pkt. Mixed Sweet Pea.	1 pkt. Mixed Nigella.
1 pkt. Sweet Mignonette.	1 pkt. Mixed Phlox.
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1 pkt. Sweet William.	1 pkt. Sweet Rocket.
1 pkt. Mixed Poppy.	1 pkt. Carnation Pink.
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1 pkt. Mixed Larkspur.	1 pkt. Mixed Marigold.
1 pkt. Mixed Petunia.	1 pkt. Mixed Zinnia.
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1 pkt. Mixed Nasturtium.	

25 Bulbs, a Beautiful Collection, sent with this order, including Hyacinths, Tulips, Crocus, Tuberoses, Gladiolus, Caladium, Oxalis, if you will send at once 25 cents in silver or stamps. Address

E. C. HOLMES, Somerville, Mass.

MOORE'S

LONG-TONGUES AND GOLDEN QUEENS
Select Untested, \$1; 6 for \$5; 12 for \$9. Tested,
\$1.50; 6 for \$8. Best Breeders, \$3.50. Safe arrival
guaranteed. **W. A. RAIL,** ORANGE, CALIF.
7D6t

The Rietsche Press

Made of artificial stone. Practically indestructible, and giving entirely satisfactory results. Comb foundation made easily and quickly at less than half the cost of buying from the dealers. Price of Press, \$1.50—cash with order. Address,

ADRIAN GETAZ,

KNOXVILLE, TENN.

J. G. Goodaer, of this State, writes me that he "prefers to pay \$25.00 for a Rietsche Press rather than do without it."—A. G.

Mention Bee Journal when writing.

Passengers east from Buffalo to Fort Wayne, Findlay, Fostoria, Cleveland, Erie, Buffalo, New York City, Boston, and all points east, will consult their interests and find advantage in selecting the Nickel Plate Road east from Chicago. Three through trains are run daily, with through day coaches to New York City, and modern Pullman sleeping-cars to destination. Rates always the lowest, and no excess fares are charged on any train, for any part of the journey. Modern dining-car service, with individual club meals, ranging in price from 35 cents to one dollar; also meals a la carte. Ask for tickets via the Nickel Plate Road. Chicago depot, La Salle and Van Buren Sts., the only station in Chicago on the Elevated Loop. Chicago City Ticket Office, 111 Adams St. Detailed information may be secured by addressing John Y. Calahan, General Agent, 113 Adams St., room 298, Chicago.

1—12A6t



12.80 for
200 Eggs
INCUBATOR

Perfect in construction and
action. Hatches every fertile
egg. Write for catalog to-day.

GEO. H. STAHL, Quincy, Ill.

65c for 12 Names For names and P. O. of
12 farmers and 15c-
stamps taken—we will send for 2 yrs. the Farmer's
Call—reg. sub. price 40c a year. P. C. is a wky., 25
years old, 1,300 pages a year. Sample free.

FARMER'S CALL, Quincy, Ill.

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Lowest Prices

Big Discount for Early Orders

On Cash Orders

Before November 1.....	.9 per cent
" December 1.....	.8 "
" January 1.....	.7 "
" February 1.....	.6 "
" March 1.....	.4 "
" April 1.....	.3 "

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OF ALL KINDS

Established Nearly 25 Years

We have published **THE AMERICAN BEE-KEEPER** for 15 years (monthly, 50c a year.) The largest and best illustrated magazine of its kind for the price published. Edited by two of the most experienced bee-keepers in America.

Sample copy free.

Our large, illustrated Price-List of Supplies free on application. Address,

The W. T. Falconer Mfg. Co.

JAMESTOWN, N. Y.

Mention Bee Journal when writing.

Honey and Beeswax

CHICAGO, March 7—Choice white comb honey is not plentiful, and it sells upon arrival at 15c per pound. Other grades of comb are not in demand and sell at uncertain prices of 10@14c per pound. Choice white extracted, 6@7½c; amber grades, 5½@6½c. Beeswax, 30c per pound. R. A. BURNETT & CO.

TOLEDO, Feb. 19.—The market for comb honey has been better for the past two weeks than at any time during the past season. Prices are firm on account of the scarcity. We are getting 15@16c for fancy white clover; 14@15c for No. 1, and 13@14c for amber. Buckwheat, 13c. Extracted honey is in good demand at following prices: White clover in barrels brings 6½@7c; amber, 5½@5½c; in cans every grade from 1@13c higher. Beeswax is firm and in good demand at 28 and 30c.

The above are our selling prices, not what we pay. GRIGGS BROS.

INDIANAPOLIS, March 24—Fancy white clover comb brings 16c; No. 1, 14c; demand exceeds the supply; fancy white western comb brings 14@15c; amber grades in poor demand at 12c. Best grade of extracted honey brings 8½@9c in 60-pound cans; amber, 6c. Good average beeswax sells here for 33c per 100 pounds. WALTER S. POUWER.

PHILADELPHIA, March 20—The call for honey is falling off, and while the supply is not abundant, yet it equals the demand. We quote fancy white, 16@17c; amber, 13@14c. Extracted, white clover, 7@8c; amber, 6@7c. Beeswax, 28c.

We are producers of honey and do not handle on commission. WM. A. SELSKR.

NEW YORK, March 19.—Demand for comb honey is fair, especially for the better grades, and fancy white is selling at from 14@15c; No. 1, 13c; light amber, 11@12c; no more demand for dark comb honey. Extracted is in good demand, mostly California, at unchanged prices. Beeswax is firm at 29@31c, according to quality. HILDRETH & SEGELEN.

Headquarters for Bee-Supplies

Complete Stock for 1906 now on hand.

FREIGHT-RATES FROM CINCINNATI

are the LOWEST, ESPECIALLY for the SOUTH

as 'most all freight now goes through Cincinnati.

Prompt Service is what I practice.

You will

Satisfaction Guaranteed.

SAVE MONEY BUYING FROM ME.

Catalog mailed free. Send for same.

335 ROOT'S GOODS

QUEENS bred in separate apiaries, the **GOLDEN YELLOWS, CARNIOLANS, RED CLOVERS and CAUCASIANS.**

For prices, refer to my catalog, page 20.

C. H. W. WEBER

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

CINCINNATI
...OHIO...

HONEY AND BEESWAX

When consigning, buying or selling, consult
R. A. BURNETT & CO.
199 SOUTH WATER ST. CHICAGO, ILL.

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ONE TON

White Clover Honey

Candied—a 60-pound can, \$6. Cash and instructions sent to Farmers' Bank.

JOHN C. STEWART
8Atf HOPKINS, MO.

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FOR SALE

Until further notice, finest quality new crop California Water-White White Sage and Light Amber **HONEY** in 60-lb. tins, 2 in a case; new cans and new cases. Write for prices and samples, and state quantity you want.

HILDRETH & SEGELEN
265 & 267 Greenwich Street, NEW YORK, N.Y.
34Atf Please mention the Bee Journal.

Cash for Beeswax

Highest market price paid promptly all the time for good wax.

Frank G. Clark, 147 E. Kinzie St. Chicago, Ill.
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BEE-SUPPLIES

We handle the finest Bee-Supplies, made by the **W. T. Falconer Mfg. Co.**, Jamestown, N. Y. Big Discounts on early orders. Let us figure with you on your wants.

MUTH SPECIAL DOVETAIL HIVES have a Honey-Board, Warp-Proof Cover, and Bottom-Board. Think of it, same price as the regular styles. Send for Catalog.

THE FRED W. MUTH CO.
51 Walnut Street, CINCINNATI, OHIO.

At Root's Factory Prices

EXTRAVAGANCE IN THE GUISE OF ECONOMY

When you Order Bee-Supplies

Don't sit down and write to a dozen or more concerns for prices, pick out the cheapest dealer, order your goods from him, and then think you are being economical. If you do

You Only Fool Yourself

Some bee-keepers think a "bee-hive is a bee-hive"—others know better.

The Lewis Hive

Has been on the market for 30 years. It ought to be nearly perfect by this time, and so it is. All parts accurately fitted, smoothly planed, going together like the parts of a watch; made of fine, clear, clean, white, Wisconsin pine.

When you Order Lewis Goods

You pay no more than they are worth. You get just what you pay for, and you know before the goods are even shipped that they will be right, or we will make them right. **LEWIS** is only another word for the best. Don't waste your money. Don't waste your time. Don't try your patience by experimenting.

Experience Teaches a Hard School

You are through going to school, so order **LEWIS** goods to-day. They bring the best results.

Twenty-six Distributing Points in the United States. Here they are:

ENGLAND—E. H. Taylor, Welwyn, Herts

CUBA—C. B. Stevens & Co., Havana

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CALIFORNIA—The Chas. H. Lilly Co., San Francisco

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Fletcher-Doyle Co., San Diego

Fallbrook Co-operative Ass'n, Fallbrook

COLORADO—R. C. Aikin, Loveland

Arkansas Valley Honey-Producers' Association, Rocky Ford

COLORADO—(Continued.)

Colorado Honey-Producers' Association

Grand Junction Fruit-Growers' Association

Grand Junction

Robert Halley, Montrose

ILLINOIS—York Honey & Bee-Supply Co.,

Chicago

Dadant & Sons, Hamilton, Ill.

IOWA—Adam A. Clarke, Le Mars

Louis Hanssen's Sons, Davenport

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INDIANA—C. M. Scott & Co., Indianapolis

MICHIGAN—A. G. Woodman Co., Grand Rapids

MINNESOTA—Wisconsin Lumber Co.,

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MISSOURI—E. T. Abbott, St. Joseph

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TEXAS—Southwestern Bee Co., San Antonio

UTAH—Fred Foulger & Sons, Ogden

WASHINGTON—The Chas. H. Lilly Co., Seattle

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